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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,855	07/21/2003	Stephen R. Foltyn	S-100,564	6546

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UNIVERSITY OF CALIFORNIA  
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EXAMINER
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COOKE, COLLEEN P

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 01/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/624,855

Applicant(s)

FOLTYN ET AL.

Examiner

Colleen P. Cooke

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) 1-13 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 14-17, 19 and 20 is/are rejected.  
7) ☒ Claim(s) 18 is/are objected to.  
8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/26/05.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

***Response to Arguments***

In light of the amendments made, the rejections of claims 14, 15, 18, and 20 under 35 U.S.C. 102(b and e) over Miller et al. and Holesinger et al. have been overcome, as has the rejection under 35 U.S.C. 112, 2<sup>nd</sup> paragraph. These rejections, therefore, have been dropped.

Applicant's arguments filed 10/26/05 with respect to the rejections made under 35 U.S.C. 103(a) have been fully considered but they are not persuasive.

The applicant argues that the secondary reference relied upon in both 103 rejections, Bruchhaus (WO 03/021656), fails to teach or suggest the  $\text{SrTi}_x\text{Ru}_{1-x}\text{O}_3$  layer as claimed because Bruchhaus teaches the addition of  $\text{TiO}_2$  to strontium ruthenate (SRO) and therefore does not teach a mixture of strontium ruthenate (SRO) and strontium titanate (STO). This is not persuasive because Bruchhaus teaches that the process includes the transformation of the  $\text{TiO}_2$  (which is added to the SRO layer) into strontium titanate (STO) and therefore results in a layer having a mixture of SRO and STO (see page 6, line 3 through page 7, line 9 and in particular page 7 line 1 which states that STO is formed). Therefore Bruchhaus appears to meet the claim limitations.

***Election/Restrictions***

This application contains claim 1-13 drawn to an invention nonelected with traverse in a telephone conversation on 5/15/05. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Claim Objections***

Claim 18 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. As a result of the amendments made to claim 14 such that x cannot be 1, claim 14 now requires some amount of ruthenium in the buffer layer; claim 18 limits the buffer layer to strontium titanate (i.e. having no ruthenium) and therefore fails to further limit the buffer layer of claim 1 which must contain some ruthenium.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-16, 19, and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Jia et al. (6756139) in view of Bruchhaus (WO 03/021656).

The applied reference has a common assignee and 3 common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application

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which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Jia et al. teaches a Ni-alloy substrate, an IBAD-MgO layer, a strontium ruthenate (SRO) layer, and a YBCO layer (see Figure 1). Although Jia et al. teaches that the SRO layer has many properties and characteristics ideal to this architecture, Jia et al. does not teach that the layer may be  $\text{SrTi}_x\text{Ru}_{1-x}\text{O}_3$ .

Bruchhaus teaches that when using SRO in ferroelectric applications, problems arise including formation of undesirable compounds, such as  $\text{RuO}_2$ ,  $\text{SrO}$ , and  $\text{SrCO}_3$ , upon exposure to the atmosphere and annealing and that undesirable properties may result (page 2, line 15 through page 3, line 8). Bruchhaus therefore substitutes SRO enriched with  $\text{TiO}_2$  in place of SRO to avoid the problems discussed (page 3, lines 15-21).

It would have been obvious to modify the superconductor architecture of Jia et al. by enriching the SRO layer with some  $\text{TiO}_2$  because Bruchhaus teaches some problems are associated with SRO in similar processing and applications and that the addition of  $\text{TiO}_2$  alleviates these problems.

Claims 14-17, 19, and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Jia et al. (6800591) in view of Bruchhaus (WO 03/021656).

The applied reference has a common assignee and 3 common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention “by another”; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Jia et al. teaches a Ni-alloy substrate, an IBAD-MgO layer, a strontium ruthenate (SRO) layer, and a YBCO layer (see Figure 1). Jia et al. further teaches that an additional buffer layer, which may be CeO<sub>2</sub> may be used between the SRO and YBCO layers (Column 4, lines 33-40). Although Jia et al. teaches that the SRO layer has many properties and characteristics ideal to this architecture, Jia et al. does not teach that the layer may be SrTi<sub>x</sub>Ru<sub>1-x</sub>O<sub>s</sub>.

Bruchhaus teaches that when using SRO in ferroelectric applications, problems arise including formation of undesirable compounds, such as RuO<sub>2</sub>, SrO, and SrCO<sub>3</sub>, upon exposure to

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the atmosphere and annealing and that undesirable properties may result (page 2, line 15 through page 3, line 8). Bruchhaus therefore substitutes SRO enriched with  $\text{TiO}_2$  in place of SRO to avoid the problems discussed (page 3, lines 15-21).

It would have been obvious to modify the superconductor architecture of Jia et al. by enriching the SRO layer with some  $\text{TiO}_2$  because Bruchhaus teaches some problems are associated with SRO in similar processing and applications and that the addition of  $\text{TiO}_2$  alleviates these problems.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colleen P Cooke whose telephone number is 571-272-1170. She can normally be reached Mon.-Thurs. 8am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, her supervisor, Stan Silverman can be reached at 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Colleen P Cooke  
Primary Examiner  
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